ment, the imitation of seal impressions, the forgery of postage stamps, and the examination of handwriting are also briefly touched upon in this section, whilst there is a cognate section upon the detection of robbery from letters and parcels in transit.

Other subjects which are discussed include the examination of dust and stains, the development of finger-prints, the investigation of the cause of fires and of damage to crops, and the examination of fibres, ropes, and clothing. In each case references to literature on the subject are appended, and illustrative cases usually given.

Regarded as a whole, the book should be welcomed by every chemist whose work is likely to include any problems in which legal questions are involved, and it might well be made the nucleus of a more comprehensive work on forensic chemistry. It is sometimes urged against the publication of details of scientific methods as applied to the detection of crime, such as are given here, that it is dangerous to provide prospective criminals with information in a convenient form for reference; but this objection applies with more cogency to the publication of the scientific methods of combating the adulteration of food. The adulterator is frequently waiting to be made acquainted with the scientific drawbacks of his methods, whereas the persons who commit other forms of fraud are nearly always without scientific training and, if they were to attempt to avoid one scientific pitfall, would be almost certain to fall into another. C. A. M.

Our Bookshelf.

Optical Projection. By Lewis Wright. Fifth edition, rewritten and brought up to date by Russell S. Wright. (In two parts.) Part i., *The Projection of Lantern Slides.* Pp. viii + 87. (London: Longmans, Green, and Co., 1920.) Price 4*s.* 6*d.* net.

THIS completely revised edition of Mr. Lewis Wright's book is very welcome. We are glad to see that the oil-lantern, which is so handy in small class-rooms and in the huts of camps, is still regarded as a possible projector. It may be mentioned that if this lantern is filled for each occasion, and set up lighted in an adjacent room, or, better still, in the school-yard, for forty minutes or so before the lecture, all risk of producing offensive fumes will be avoided. In regard to screens for such class-rooms, may we add that a square of mounted diagram-paper, which is made 5 ft. wide, gives an excellent surface, and can be kept rolled up and fixed with large drawing-pins as required? Lastly, when Mr. R. S. Wright gives suggestions as to flash-signals, should he even tolerate the "next slide" system of communication with the operator? The recently introduced silent wave of the pointer has escaped mention in this useful treatise. G. A. J. C.

Elementary Agricultural Chemistry: A Handbook for Junior Agricultural Students and Farmers. By Herbert Ingle. Third edition, revised. (Griffin's Technological Handbooks.) Pp. ix + 250. (London: Charles Griffin and Co., Ltd., 1920.) Price 5*s.*

THERE are no essential differences between this and the second edition of Mr. Ingle's book. The volume provides an excellent introduction to its subject in a form which should be intelligible to the practical agriculturist as well as to the scientific student. It contains a number of interesting and useful tables, and on account of its very reasonable price it should be popular with students of agriculture. Although described on the cover as "A Practical Handbook," it contains no account of experiments or methods of analysis, but these would no doubt have increased the size of the book beyond the limits desired.

Luck, or Cunning, as the Main Means of Organic Modification? An Attempt to Throw Additional Light upon Darwin's Theory of Natural Selection. By Samuel Butler. Second edition, re-set, with author's corrections and additions to index. Pp. 282. (London: A. C. Fifield, 1920.) Price 8*s.* 6*d.* net.

THIS is a reprint of the first edition published in 1886. The only important changes are in the index, which has been considerably enlarged by additions made from notes by the author in a copy of the first edition. As is announced in the introduction, the book is written round Samuel Butler's favourite theories, "the substantial identity between heredity and memory," and "the re-introduction of design into organic development."

Notes on Chemical Research: An Account of Certain Conditions which apply to Original Investigation. By W. P. Dreaper. Second edition. (Text-books of Chemical Research and Engineering.) Pp. xv + 195. (London: J. and A. Churchill, 1920.) Price 7*s.* 6*d.* net.

THE first edition of this stimulating work was reviewed in NATURE for February 6, 1913. The new edition is divided into two portions, the first dealing with the history and method of research, and the second with modern works practice. A chapter in the latter portion is given up to the consideration of the training desirable for a research student. An index would have been helpful.

Spiritual Pluralism and Recent Philosophy. By C. A. Richardson. Pp. xxi + 335. (Cambridge: At the University Press, 1919.) Price 14*s.* net.

THE author examines the Weber-Fechner law of sensation and shows that "unperceived sense-data," such as are sometimes deduced from it, are not logically admissible. He expresses spiritual

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pluralism as the assumption that our sense-perceptions are due to other "subjects of experience" of a non-material nature, and akin to our own subjective self. Guided by this principle, he discusses determinism and immortality, the relation of mind and body, and certain abnormal phenomena usually called "spiritualistic."

Unconscious Memory. By Samuel Butler. Third edition, entirely reset; with an Introduction and Postscript by Prof. Marcus Hartog. Pp. xxxix + 186. (London: A. C. Fifield, 1920.) Price 8*s*. 6*d*. net.

THE first edition of this work was reviewed in NATURE for January 27, 1881. The second edition, noticed in NATURE for November 3, 1910, contained an introduction by Prof. Marcus Hartog, giving an outline of Samuel Butler's works and discussing their value to science. In the present edition Prof. Hartog has appended to his introduction a postscript in which he sets forth, briefly, the position of Samuel Butler's biological works in modern science.

Wild Fruits and How to Know Them. By Dr. S. C. Johnson. Pp. xi + 132. (London: Holden and Hardingham, Ltd., n.d.) Price 1*s*. net.

A BRIEF description of most of the trees and shrubs found on the English countryside is given, special attention being paid to the forms of inflorescences and fruits. Identification of specimens is greatly simplified by the large number of sketches, showing both foliage and fruit, which are included. The last chapter is devoted to the commoner plants and weeds which, have conspicuous fruits.

Silver: Its Intimate Association with the Daily Life of Man. By Benjamin White. (Pitman's Common Commodities and Industries.) Pp. xi + 144. (London: Sir Isaac Pitman and Sons, Ltd., n.d.) Price 2*s*. 6*d*. net.

THIS volume is more concerned with the statistics and economics of silver than with technology, although an interesting account of the extraction, purification, and utilisation of silver is given. There are many useful tables. An interesting chapter deals with "The Evolution of British Coinage." The book is addressed to the general reader, but contains much of service to teachers and students.

The Identification of Organic Compounds. By the late Dr. G. B. Neave and Prof. I. M. Heilbron. Second edition. Pp. viii + 88. (London: Constable and Co., Ltd., 1920.) Price 4*s*. 6*d*. net.

THE second edition of this useful manual has undergone practically no alteration. It is one of the best books of its kind, and contains a large amount of information in a handy and compact form. We have no doubt that it will continue to find favour among students and teachers of chemistry.

Gold: Its Place in the Economy of Mankind. By Benjamin White. (Pitman's Common Commodities and Industries.) Pp. xi + 130. (London: Sir Isaac Pitman and Sons, Ltd., n.d.) Price 3*s*. net.

THE steps by which gold has acquired its high value, and its past history with regard to production and uses, are described. The last portion of the book is devoted to a review of the gold stocks in the world and their movements before and during the Great War. A number of tables is included, showing the amount and value of gold in use in various countries; these should be of interest to students of commercial geography and economics.

Pastimes for the Nature Lover. By Dr. S. C. Johnson. Pp. 136. (London: Holden and Hardingham, Ltd., n.d.) Price 1*s*. net.

SOME of the plants and smaller animals commonly found in this country are described, and methods of preserving them or of studying their habits, as the case may be, are given. Silkworms and Nature photography are also mentioned. The book would be of use to young collectors.

Letters to the Editor.

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University Grants.

I AGREE with Sir Michael Sadler in thinking that the article on university grants in NATURE of August 5 is very opportune, and I concur completely in all that he says on the subject in the issue for August 12. It is not necessary for me to repeat the arguments and the statements so briefly and emphatically expressed by the Vice-Chancellor of the University of Leeds, because I feel sure that everyone with a competent knowledge of the situation in the modern universities would agree that Sir Michael Sadler has by no means understated the gravity of the crisis with which the universities are faced.

At Birmingham, as at Leeds, we have been rigidly economical in our expenditure. We know that we are doing work the value of which is appreciated by our students and the community of the Midlands whom we endeavour to serve. But unless large new grants are forthcoming it will be impossible for us not only to continue to meet those needs, but also to maintain the standard of work in the various departments.

To what Sir Michael Sadler has said I would add only two points:

(1) Unless the stipends of the non-professorial staffs of the universities are placed on something like equality with those obtaining for skilled intellectual work elsewhere, *e.g.* in the Government service or in the service of the great municipalities, it will be impossible to obtain or retain the men and women with the requisite qualifications for university work; and it is from the members of the non-professorial

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